

Volume 10 Number 1

ATARI USER

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issue



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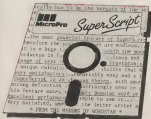
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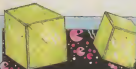
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SUPER SOUND CHIP ON WAY

ATARI is on the verge of launching a revolutionary sound synthesizer chip for the ST.

Latest Frontier, senior chairman Josh Tramel and himself a leading company battle, revealed this to Atari writer Andrew Bownett.

The early development of the chip—known as the Amy—began in the pre-Frontier days and was the first and only project started after the 8008L.

"They set out to develop a custom chip of great complexity but they had limited resources and poor development tools," explained Leonard Tramel.

"Although the architecture was brilliant the early version of the chip didn't work."

"When we took over Atari we saw Amy as an excellent potential product. Now we have seen the design to a company that I cannot name just yet and they are hoping to have the final working chips ready soon."

ST software

SEVEN new software titles for the Atari ST series have been announced by Infocom.

They include four games—Shuttle II, Trivia Challenge, Electronic Pool and Portal Fantasy—a multi-user bulletin board system, BBS Writer, 3 voice package Personal and instant system Mighty Mail.

All program listings in Atari User are now available for free downloading on MicroLink, the UK's fastest growing electronic mail service. They join hundreds of programs already available in the telecommunications area, one of the most popular areas of MicroLink.



Surprise launches at the show

WITHOUT advance warning, Atari launched two new machines and a breakthrough graphics chip on the second day of the PCW Show.

Visitors to 'The World of Atari' 80th-anniversary stand at Olympia were surprised to see the latest additions to the ST range—the 3860STX and 4180STX—suddenly appear in a glass display case.

At the same time officials began to demonstrate the 5M extension which increases graphics speed eightfold.

Even the Atari press office appeared to have taken caught napping, having to prepare information sheets on the spot after the event.

The two new machines have the increased memory capacity of two megabytes and four megabytes respectively.

Both are totally ST compatible and feature an in-built one megabyte logic disc drive. According to Max Barnidge, general manager of Atari UK, the 3860STX and 4180STX will find a ready market among specialists working in CAD

also operations, artificial intelligence applications and high level programming such as Lisp.

Price of the two megabyte machine is £1499 with interchangeable monitor and £1349 for the colour model. The top of the range four megabyte ST will carry a price tag of £1499 monochrome and £1599 colour.

Both the 1040STX and the 4180STX will go on sale in the UK in November.

The same month will see the

Bit chip go on sale for £80 as an upgrade for the complete ST range.

It will need to be fitted by Atari authorised dealers and independent Atari service centres.

Comments Les Player, Atari's technical manager, the very simple in operation. The chip just moves memory around very fast without the need to use the 68000 CPU. This means that animation sequences will run much faster without increasing overall processing power.

More 8 bit games

NINE all-action games for Atari 8 bit continue to be released by Red Hat Software this autumn.

Just out the Freddy Factory and Hobbit Reppelmen both £4.99 on disc and £2.99 on tape. War Cycler and Astro Grot £8.99 on disc and £7.99 on tape.

To close the month are DevilDog, Gerby and Demolition of the undead both £9.99 on

disc and £7.99 on tape and Treasure Island and Dragon's Breath £4.99 disc and £3.99 tape.

Planned for release in November is Savage from Planet X which will cost £4.99 on disc and £2.99 on tape.

Red Hat will be releasing a version of its other success Shooting Wings for the ST series in early December price £19.99 on disc.

In brief

ATARI has expanded SGT Maintenance, a, a postpaid third party contract maintenance service for its 1040STP and 1050STH machines.

The firm has a network of more than 100 engineers backed by 12 service centres and two repair centres covering the UK and Ireland.

INTERACTIVE Milan specialist telephone is releasing two new titles for Atari machines this autumn.

Leather Goddesses of Flesh and Massacre bring the number of titles on 1050 available for Atari 8-bit and ST to 22.

A NEW business program released by Castlure Software for the ST series is Monitor designed for small hotels of up to 100 rooms.

It offers a front office system handling all guest changes and reservations as well as a full back office covering all sales, purchases and financial ledgers.

Monitor also provides a word processor and means writing letters. Price (£1190).

A TRIO of new products for the Atari ST has been launched by systems software house Masscomp.

Centridge Up is an interface with integral compiler added to the fully featured expert systems development environment for the ST.

It supports applications such as robotics, natural language interfaces and expert systems. Price (£1495).

Also new for programmers from Masscomp are the BCPL compiler at £29.95 and Metademo Make utility £49.95.

A PERIPHERAL which offers true 80-clocks for Atari 8-bit machines was on display at the BCW Show.

The XEP-80 to be released any day now is one of a string of new products reported to be in the pipeline for the 130XE and 800XL.

CHRISTMAS SHOW RUSH

With two months still to go exhibitors are rushing to book space at the Atari Christmas Show.

Those don't want to risk getting left out of a repeat success story following the most recent success of the first Atari Computer Show in London last March.

A total of 10,000 visitors turned up then and that means a demonstration of support effectively is established Atari as a market leader in the UK computer industry.

The upcoming Atari show also returns to London on

Friday, Saturday and Sunday November 28 to 30 at the centrally located New National Exhibition, Westminster.

All the leading producers and suppliers of Atari add-ons and software will again be represented, occupying well over 100 stands in the spacious 20,000 sq ft exhibition hall.

Big names like Software Express, Twinkstar, CDS Microplay and Advanced Systems & Technologies will be there - ensuring plenty of interest for 8-bit and 16-bit enthusiasts alike.

New programs and add-ons

for the ST series and 8-bit range will be launched at the show and there will be opportunities to purchase the UK's leading experts on Atari computers.

The event promises to fulfil all the wishes of pre-Christmas shoppers wanting to fill their stockings with the latest Atari hardware and software.

It opens from 10am to 5pm Friday and Saturday, November 28 and 29, and 10am to 4pm Sunday, November 30.

There is £1 off all the price of tickets ordered in advance using the coupon on Page 12 of this issue of Atari User.



Some of the latest software packages are built for the Atari ST using are powered with a 1040STP which comes with the 512K standard operating system TOS.

Artwork utility

All levels of artwork going to life on the Atari ST with MakeIt Move a new package from Californian software house Acis Associates.

In progress is set of utilities designed to animate pictures and present them in a variety of dynamic ways by using such features as moving objects, video transitions, zooms and fades. Price £49.95.

8 bit speed boost

OWNERS of Atari 8-bit machines can load and run disks at twice normal speed and read/write up to five times faster with a new drive application from Innovative Software.

The 15 Plus drive for the Atari 1050-disc drive has 15K of on-board RAM and is compatible with all operating systems on the market.

Serial access is not required to obtain top-speed as with LSI controllers. Other features are auto-chase, fast write, fast read, direct write, lock state on/off and fast formatting.

Available exclusively from Chips Computer Centre, West Wokingham, the 1050 15 Plus disc drive enhancement costs £39.95.

More power on tap

DESCRIBED as a major advance in low processing power available, K-Max is a new add-on from Korte Computers which plugs into the rear port of the Atari ST.

Inside K-Max is an interface board and a dual processor board which can contain two Intel 80186 microprocessors and two blocks of 256K of ram.

Each 80186 is a 2.5 mips (million instructions per second) 32 bit Pentium processor.

Parallel means they are usually be connected by simply adding their Mips together -

two 2.5 Mips processors making the total of 10 mips.

K-Max is controlled via the ST keyboard and uses very specially developed software.

Korte has supplied a cross assembler and editor as the main tool for controlling and programming the 80186 microprocessors.

Additional functions include a machine monitor debugger and disassembler - the ST emulates 80186 code at 80,000 Cycles a minute says Korte. K-Max costs from £1,490.

New link-up to US database

MicroLink has widened a world first with a new electronic link across the Atlantic. It allows subscribers to have instant access to a giant American database - including a directory another especially for Apple users.

And the cost will be approximately half that of a conventional international call.

The breakthrough has come about as a result of a deal struck between MicroLink, the UK's fastest growing local service and New York based Microbase.

Gateway

With the help of its American partner, MicroLink has set up a complex electronic gateway which enables the exchange of messages between users on opposite sides of the Atlantic.

The computer link opens up a host of new services to MicroLink subscribers.

Included among some 40 special interest groups is one specifically for Apple users which provides all the latest information on what is available for the machine from sale.

There is also reference Apple database connected with information, along with message and chat facilities.

But Microbase isn't just about computers. Special interest groups catered for include doctors, dentists, artists, experts, lawyers and writers, and there is a micro-conferencing facility.

Instant

Other services include global news round the clock from the Associated Press and instant information from Dow Jones, the New York stock exchange reporter.

"We are delighted that we are able to offer this first," says Derek Marlowe, head of MicroLink. "It's going to transform the way we communicate with our customers over in the States."

Now the technicians at Microbase are working on a reverse link to allow new users in the USA to share all the facilities offered by MicroLink.

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More ST packages

Two powerful business packages have been released for the Atari ST by London

Involving/Comet. Processing module includes order processing, price list and journal and has the facility to allocate sales the complete invoice as individual entries to those main areas - such as sales represent, travel, sales area and department - as required.

This can be used for many purposes in accounts, sales analysis and reporting, for example slow paying and bad debt report per salesman. Price £160.

Section Accounts includes sales purchase and general ledger and balance forecasting and graphics.

There is also an extensive search and reporting facility and it is possible to use nominal account numbers to enhance reporting. Price £250.

DEALING WITH DATA

A PACKAGE designed to handle multi-dimensional data efficiently is soon to be released by Module-5. Software for the Atari ST, GeoFile/ST provides full screen functions for the storage and retrieval of complex data structures and is implemented as a set of library modules.

A demonstrator program showing the use of GeoFile for implementing a simple data base of names and telephone numbers is included.

The price is expected to be around £30.



One of the modern exchanges on the new MicroLink/Telephone system. Involving/Comet user Phil Coleman of London and BSC user Peter Oliver Chester.

Making music

MARINO music with your Atari ST, by release becomes possible with two new products from 2 Bit Systems.

Midi Master is a Midi interface featuring an eight track recording tape sequencer, a Casio CZ voice editor for editing and storing voices on disc or cassette and a Yamaha DX1/DX21 series voice editor.

has a music player program allowing users to play Music Composer or AM5 using files via Midi. Price £33.65.

Particular Master is a professional quality drum kit featuring four sampled drum sounds, three drum programmable a facility to load the user's own drum samples and pull down windows.

... and composing

LATEST release in the K-series from Kuro Computer for the Atari ST is K-MidiMaster, a music composition package operating under GEM.

It has 3,000 sounds in four channel mode with on-screen, spreadsheet, chord and melodic notation for not composition.

to the user's composition. The Midi interface allows music to be played on 4, 8, 12 or 16 channels. There is a challenge of 100,000.

All or selected parts of a tune may be played and several complete tunes are included on the disc, which costs £25.95.

World of Atari focus was on the ST

THE Personal Computer World Show has become the industry's main forum for demonstrating the latest technology and showing off its new ideas. It can not have escaped anyone's notice that Atari planned to dominate the 1988 Show at Olympia, and dominate it it did.

On the lower floor you could see the latest offerings from Amstrad, Sinclair, Acorn and the like while upstairs Atari had taken over an entire hall with its World of Atari show within-a-show. But what was there to show for this massive amount of floor space?

Well the single most obvious fact about the Atari stand was that it was predominantly ST-oriented. There were a few 8 bit machines about — mainly on the third-party stands — but Atari seemed far more interested in pushing the ST.

Indeed, the only specially constructed development for the ST range was the XEP 8080 column box. This seemed a somewhat tacky unit interfacing as it did through the jacked joystick port. You might have expected Atari to use the parallel bus for such a device, but instead they used the more awkward joystick option. The display itself was good but it required a special driver to be hooked from the bus in order to run.

On the ST side though the story was quite different. Atari was showing three major additions to the range. The much predicted 20b 2680 ST was on display in a glass case as was the even larger 4 and 4180 ST. These new machines — to be released in four to six weeks — were probably far less interesting than the new blitter chip which was running on an existing 1040.

It seems that will be a straight forward modification for existing owners, consisting of six new rom chips and the blitter itself with the price including fitting by your dealer. Apparently the chip interfaces to the operating system by re-wiring the Link A interface, thus speeding up almost every level of the machine including the rather slow GEM text display.

The demo running on the stand

showed a whole flock of birds flying over a coastline landscape and the blitter version ran three to four times faster than the straight 1040. An Atari representative said that the blitter was a first beta-test new and should be available early in the New Year.

Atari is now awaiting delivery of the revised version of Basic, but from what I've heard so far you might just as well buy a copy of Computer Concepts Fast ST Basic — a truly remarkable feat of programming with benchmarks three at least three times faster than the IBM AT and an amazing eight times faster than the BBC Micro.

As it also fully supports the GEM environment I feel that this could well be the Basic of the future as far as the ST is concerned.

The future of the ST is bright indeed if the quantity and quality of ST software support continues at the pace we saw at the show. Notable products included MirrorSoft's Art Director — a superb graphic art package which gives more features and facilities than ever before.

Kynte and Microdeal had their latest offerings on display and the number of accounts, spreadsheets, databases, coming and other business packages available indicates that the market is treating the ST as a serious and useful business tool, not just a wily pretty graphics machine as certain other 16000 based machines seem to be becoming.

All in all a very encouraging show with Atari moving ahead in leaps and bounds with the ST range. Not are the 16 bit machines being abandoned although Atari does seem to be leaving that area mostly in the capable hands of the third-party suppliers while it concentrates on pushing back the frontiers of 16 bit technology.

With the 2680 and 4180, the blitter and the TT plug-in co-processor board on the horizon there has never been a better time to move into the world of 16 bit computers and there has never been a better machine to do so with than the ST.

Andrew Willey

An event NOT to be missed!

Atari Christmas Show

**Royal Horticultural Hall
Westminster, London SW1**

Friday November 28 10am-6pm

Saturday November 29 10am-6pm

Sunday November 30 10am-4pm

The first ever Atari Show last spring was an outstanding success. From all over Britain Atari enthusiasts flocked to London to find out all they could about their favourite machine.



Soon the record-breaking Atari Show will be back - with three days devoted to the exciting developments in this expanding market. Make a note in your diary NOW to make sure you don't miss this great Christmas extravaganza!

- All the latest software from publishers in both the UK and USA
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- ★ Answer the five simple questions.
- ★ Cut out or photocopy the entry form.
- ★ Send it to **Smash Hits Contest, Atari User, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.**
- ★ Prizes will go to the senders of the first 50 correct entries opened on October 31.

THE QUESTIONS

- 1 Which game, written by American programmer Ron Weisbrod, was the most successful ever written for the Atari?
- 2 What's the maximum number of colours the Atari 8-bit computers can display at any one time?
- 3 What game's name was used to identify the Atari computer during its development (over 5 years ago)? Clue: It begins with a C.
- 4 Which game was English Software's first machine code program for the Atari 400?
- 5 Name the author of the Atari version of *Bellevue*.

Your answers

- 1 _____
- 2 _____
- 3 _____
- 4 _____
- 5 _____

NAME _____

ADDRESS _____

POSTCODE _____ AGE _____

COMPUTER OWNED _____

Do you require cassette or disc? _____

Simply boring?

Computer: Cigarette
Price: \$4.99
System: All Systems
Version: 1.00
Release Date: 1991
Developer: WEA
Publisher: WEA

CIGARETTE is a delightfully simple game, whereas more or less identical to Leggett from Imagine Software released a few years ago and so longer available.

Surprisingly, to load the game you need to type CIGARET followed by RETURN.

You control a little green character Cigarette who can move to the left and right as well as jump. The screen consists of no less than horizontal bars each with a number ranging from 1 to 10.

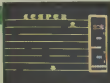
Your task here is to reach the top of the screen by positioning yourself below a gap then

jumping up to the next level. Unfortunately, if a gap appears, before you you fall down a level — and this happens a with frustrating regularity.

You can run off the screen on one side and reappear on the other which adds another dimension to the game. But you need to be careful as snakes can appear off screen and you could get killed.

Each jump costs you energy, a limited commodity. You also have to contend with the Golems which run along the vertical platforms.

There are in all different forms — Golems, The Last VW Beetle, Army Mutant, Big Green Bear, Big Green Bird and UFOs. Some move along the platforms at a leisurely pace while others really shoot along. Contact with any is fatal.



If and when you reach the top level, you must jump up a level to clear it. You return to the bottom of the screen to face a greater number of adventures. Your task is to eliminate as many as you can before you fall.

The concept is quite interesting and in general well executed. Cigarette and the other characters are well animated, colorful and humorous but action does have for a spin.

Review: Cigarette (you get it)

The Cigarette good value for money, Cigarette is a delectable. I suggest that the game has a lot of fun after a few weeks because it looks novel.

Mike Rowe

Sound	5
Graphics	7
Playability	7
Value for money	7
Overall	6

Worth the wait

System: Ghostbusters
Price: \$2.99 (retail)
Developer: Atari
Version: 1.00
Release Date: 1991
Developer: Atari
Publisher: Atari

PHLEKKE to be stored! It's been a long wait for the Ghostbusters game, to reach the Atari range but at last the Ghostbusters and the Ghostbusters are here.

And what an excellent job Atari have made of the conversion.

New York has been filled by ghosts and ghosts hell bent on ruining space control. The Temple of Doom As owner of a Ghostbusters franchise you must catch these nasty intruders, earn lots of money and make a to the ghost showbusiness top of the town.

You'll be greeted with a shot of Ghostbusters followed by a fluffy laugh (great speech synthesized).

When you finally manage to

beat yourself away from the excitement into you buy your Ghostbusters vehicle and equipment.

You'll either be presented with a loan of \$10,000 or if you've played before and reached a certain level, an appropriate cash credit depending on your entered account number.

Then it's on to the streets to look for Slimer. The screen shows a map of the city with the Slimer temple about center screen.

Your position is marked by the famous Ghostbusters logo which has been altered to the Ghostbusters to a fluffy looking red floating and casted Slimer presence. Floating and in (floating) any Slimer's on the way.

The screen changes again to show an overhead view of your car moving down the street. Any Slimer's encountered can be caught or avoided you have a weapon.

When you arrive at the intended site the screen shows the front view of the building



You must enter your name to buy the floating Slimer using the keyboard controls.

Every Slimer captured pushes up your credit (if you mismanage your positioning or let the two escape, both will be added).

When a Manhattan street is sounded the Roomers jump up to form the dreaded Manhattan Men. Once a colony of fast but slow he does much damage.

All the while, two moving enemies — the Ghostbusters and the Roomers — are headed for the temple. When they meet, the game ends if you haven't scored

sufficient credit. If you have your own credit, it's too Ghostbusters for the game.

The graphics are very good, the music and speech synthesis is excellent. Combining them with game play that is simple but great fun and you've got a winner.

Ghostbusters looks set to repeat its earlier conquests of over again.

Bob Chappell

Sound	8
Graphics	8
Playability	8
Value for money	8
Overall	8

Eastern bash away

Apprentice: Ninja
Price: £7.99
Supplier: Macintosh: £30
Post: Games: London: FOG
Addr: Tel: 01 275 2880

Hi to Ninja! Punchable grunts-duck chop. Barrels! Enemy late cut! No time.

So much for setting the Oriental atmosphere. I may not know much about Ninjaguts but what I do know is that this martial arts game is pretty good stuff.

This is a single-player only game in which you control an all looking, all punching Ninja. Ninjas died in the traditional black garb of such fighters, you set off through five screens to conquer all foes.

As well as leaving left and right, your bodily skills include high, medium and low height kicking and punching, all done very quickly, very smoothly. The animation is extremely good.

In addition to one fire and lightning footwork, you have

other weapons at your repair. Ninja - a stunning Samurai sword, spinning slash, spin and spinning jiggers.

The sword you carry with you in your shoulder at all times and can easily finish your opponent's swinging blow with a quick flick of the sword.

The stars and jiggers may be found lying around in different locations and can be picked up by mashing/steering them. Kicking also at an opponent may result fatal damage unless the opponent deflects it in time.

Unfortunately, the enemy have several weapons so you won't be the only one doing the kicking and hurting.

Also scattered around the area are small floating 'balls' which should be collected for extra points. Needless to say these are always guarded by the enemy who will let you take them without a fight.

Moving off the screen either to the left or right causes the current picture to be replaced



by the same of the area you are about to enter. The screen clears again to show you in your new location.

The animation in this game's best feature though - smooth, natural and fast, easily up to the standard of the more expensive games.

Once you've faced all your opponents in that town - actually they crumple up like cardboard - concerning - you move to the next level where tougher fighters are to be found.

It may be because I was giving the game an old 800 point 100 play, it is for 8000, and 12000, much

less but it wasn't all clear to me that I had actually moved up a level after defeating all foes - no level indicators appears on the screen.

It's a very good martial arts game with fast rate of movement and sound. The sword stars and dagger elements add an extra dimension to the fighting. For the low price, an unmissable bargain purchase.

Bob Chappell

Sound	5
Graphics	5
Playability	5
Value for money	10
Overall	5

Good collection

Apprentice: Smash Hay Volume 1
Price: £9.99 (Macintosh)
£14.99 (Atari)
Supplier: English Software 3
Addr: Private, Paragon
Games: Macintosh: M&M
185, Tel: 061 835 1344

ANOTHER in the series of compilations of earlier releases, this time contains arcade and arcade features (2-up, Super Medusa, Superdino and Quasimodo).

Crash Duty is an impressive martial arts game involving you to get your Kung Fu skills against another player or the computer.

As well as being able to jump upwards and shuffle quickly to the left and right, each fighter can kick high, low or to the body (all) and counterattack over the opponent.

Defeating is a bit of pain

Position with turtles, there are no other drivers to have parts against. What you have to watch out for and avoid are giant spheres and cubes which come hurtling out of the sky towards you.

A game will also fly over dropping large columns onto the track as speed obstacles.

There are three standard scoring modes to choose from. The game play is very fast and the speed of the game will turn your hair white! As a result, it can be a bit too difficult, but if you like a challenge and plenty of speed, you should enjoy this one.

Medusa is an unusual and tough mixture of machine-gun, arcade action and platform action.

Apert from the first, each screen offers something different and you can only progress by destroying the



hundreds and building the impulse, progress on each screen is a challenge.

Finally, Quasimodo is a platform and leaders type game offering three levels scenarios. Screen 1 has you throwing concrete down from the castle battlements at ladder climbing archers.

Screen 2 has you swinging from rope to rope in the cell tower. The final screen is you making the castle wall. Fighting off all comers.

Quasimodo is graphically

the weakest of the bunch but still offers some good play.

This is probably the most complete from English Software you could find and provides you haven't got most of the games on it. Smash Hay Volume 1 is certainly a good buy.

Bob Chappell

Sound	5
Graphics	5
Playability	5
Value for money	5
Overall	5

Set yourself up with 16 extra keys

Part 5 of LEN GOLDING's series on
using your Atari to control devices



THIS month's constructional project is a plug-in keypad which gives you up to 16 extra keys, and behaves almost exactly like the standard keyboard.

The version described works as a numeric keypad with its own Return key and single touch sensor move-ment, but each key is fully programmable.

It works in a similar way to a joystick: by setting up patterns of high and low voltages on the four input signal pins (as described in the June 1988 issue of *Atari User*). The operating system reads the pattern 60 times a second, converts it into a decimal number between 0 and 15, and stores it in address 632 (for Port 1) or 633 (for Port 2).

Figure 1 shows the circuit for four extra keys, one to each line, and that's

about the simplest worldwide gadget you can build. You could make the keys extra large for disabled people, colour-code them for pro-gamers, or set them up as function keys. You could label them. Yes.

No. Don't leave and help for a children's club or Strongly agree. Slightly agree. Slightly disagree and Strongly disagree for a questionnaire survey.

You might like to consider connecting something other than

keyboard switches — for example pressure mats to operate bumper alarms, or central heating ther-mistors to monitor room tempera-ture.

However, you're not limited to just four keys. By using all possible combinations of high and low states on the four signal lines, you can generate up to 16 different numbers (16 if you count 0).

Most keyboard switches are simple on/off devices and can't



Figure 1: Four extra keys



Figure 2: The circuit enables you to store separate codes for each of the 16 characters through a single joystick pin



desired value, then any line without electronic help. But a single diode matrix is all that's needed—and the circuit shown in Figure 11 will work perfectly well. When any of the keys is pressed, it connects one or more signal lines to the diodes to 0v while the other lines remain held at 5v by circuitry inside the computer.

Figure 11 shows a practical layout on the Veroboard breadboard—there's room for only 10 of the 16 possible combinations, but you can see the general principle.

The diodes are marked with a black band at their cathode ends and must be connected the correct way—cathodes to the switches. However, you won't do any damage by trying them both ways round.

Connect the breadboard to Port 1 using the joystick cable (note lead, then not Program 1).

```
10 FOR I=1 TO 16:PRINT CHR$(I);
20 PRINT:LOC 3,3:PRINT:GOTO 10
30 GOTO 30
```

Program 1

The number 16 will be displayed—meaning all lines are high. Now connect a test lead to the 0v line, touch it to each of the numerical points in turn and watch the number



Figure 10: Breadboard layout for the 16-point 4 × 4 0-5V output joystick port 1 pins 1, 6, 2 and 4. 1 to 16 represents data on any one of them or 0v and the contents of address 002 will change

change on screen. The single touch action can be made to generate any number from 0 to 16.

Having established the principles of operation, we can move on to the keypad construction. A printed circuit board is available (see the parts list) and this makes assembly very straightforward.

If you have facilities to make your own, the foot pattern is given in Figure 10. Holes for the diodes are 0.8mm. Holes for the switches are 1.2mm and the long holes are 3mm or 1.0in. A ready-made board is available from RMI Designs, and the completed and tested ready for use.

For a professional finish, the design uses full-travel keyboard switches which have removable transparent covers so you can insert your own legends. The PCB holes are spaced so that the keys butt up to one another, avoiding the need for a complicated panel cut-out.

Solder the diodes first, making sure to get them the right way round. Slightly bend towards the centre of the PCB then fit the terminal blocks and switches. Make sure the switch bodies sit firmly onto the board's surface with no gaps otherwise

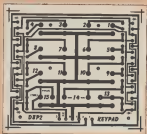


Figure 11: PCB pad pattern

constant pressing will cause the computer to get away from the PCG.

Fit a cable clip to anchor the joystick lead and mount the whole assembly in a suitable case using at least four of the six mounting holes. The front panel cut out should be 2.5mm square.

Now we need some software to drive the gadget. You could program it in Basic, just like a joystick, but it is more impressive if the new keypad can be made to act like the existing keyboard with no visible software change.

This means using a machine code routine to scan the keypad during the vertical blank interval and activate the operating system's keyboard handler whenever a key is pressed.

There is a start-up here. Whenever you write a number into address 764, the computer thinks you have just pressed a key which generates that number and will obediently print the corresponding character on screen for you.

Our software simply reads the keypad address 8320, converts the number into an appropriate keycode and stores it in address 764. The operating system does the rest.

Once in place, the routine will execute every fifth of a second independently of any Basic program which may be running at the same time.

From the user's point of view, the only difference between our new

```

10 FOR OUT TO 0: REM INITIALISE OUT
20 OUT 0
30 REM 001,002,003,004,005,006,007,008,009,010,011,012,013,014,015,016,017,018,019,020,021,022,023,024,025,026,027,028,029,030,031,032,033,034,035,036,037,038,039,040,041,042,043,044,045,046,047,048,049,050,051,052,053,054,055,056,057,058,059,060,061,062,063,064,065,066,067,068,069,070,071,072,073,074,075,076,077,078,079,080,081,082,083,084,085,086,087,088,089,090,091,092,093,094,095,096,097,098,099,100,101,102,103,104,105,106,107,108,109,110,111,112,113,114,115,116,117,118,119,120,121,122,123,124,125,126,127,128,129,130,131,132,133,134,135,136,137,138,139,140,141,142,143,144,145,146,147,148,149,150,151,152,153,154,155,156,157,158,159,160,161,162,163,164,165,166,167,168,169,170,171,172,173,174,175,176,177,178,179,180,181,182,183,184,185,186,187,188,189,190,191,192,193,194,195,196,197,198,199,200,201,202,203,204,205,206,207,208,209,210,211,212,213,214,215,216,217,218,219,220,221,222,223,224,225,226,227,228,229,230,231,232,233,234,235,236,237,238,239,240,241,242,243,244,245,246,247,248,249,250,251,252,253,254,255,256,257,258,259,260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278,279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297,298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,324,325,326,327,328,329,330,331,332,333,334,335,336,337,338,339,340,341,342,343,344,345,346,347,348,349,350,351,352,353,354,355,356,357,358,359,360,361,362,363,364,365,366,367,368,369,370,371,372,373,374,375,376,377,378,379,380,381,382,383,384,385,386,387,388,389,390,391,392,393,394,395,396,397,398,399,400,401,402,403,404,405,406,407,408,409,410,411,412,413,414,415,416,417,418,419,420,421,422,423,424,425,426,427,428,429,430,431,432,433,434,435,436,437,438,439,440,441,442,443,444,445,446,447,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466,467,468,469,470,471,472,473,474,475,476,477,478,479,480,481,482,483,484,485,486,487,488,489,490,491,492,493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,510,511,512,513,514,515,516,517,518,519,520,521,522,523,524,525,526,527,528,529,530,531,532,533,534,535,536,537,538,539,540,541,542,543,544,545,546,547,548,549,550,551,552,553,554,555,556,557,558,559,560,561,562,563,564,565,566,567,568,569,570,571,572,573,574,575,576,577,578,579,580,581,582,583,584,585,586,587,588,589,590,591,592,593,594,595,596,597,598,599,600,601,602,603,604,605,606,607,608,609,610,611,612,613,614,615,616,617,618,619,620,621,622,623,624,625,626,627,628,629,630,631,632,633,634,635,636,637,638,639,640,641,642,643,644,645,646,647,648,649,650,651,652,653,654,655,656,657,658,659,660,661,662,663,664,665,666,667,668,669,670,671,672,673,674,675,676,677,678,679,680,681,682,683,684,685,686,687,688,689,690,691,692,693,694,695,696,697,698,699,700,701,702,703,704,705,706,707,708,709,710,711,712,713,714,715,716,717,718,719,720,721,722,723,724,725,726,727,728,729,730,731,732,733,734,735,736,737,738,739,740,741,742,743,744,745,746,747,748,749,750,751,752,753,754,755,756,757,758,759,760,761,762,763,764,765,766,767,768,769,770,771,772,773,774,775,776,777,778,779,780,781,782,783,784,785,786,787,788,789,790,791,792,793,794,795,796,797,798,799,800,801,802,803,804,805,806,807,808,809,810,811,812,813,814,815,816,817,818,819,820,821,822,823,824,825,826,827,828,829,830,831,832,833,834,835,836,837,838,839,840,841,842,843,844,845,846,847,848,849,850,851,852,853,854,855,856,857,858,859,860,861,862,863,864,865,866,867,868,869,870,871,872,873,874,875,876,877,878,879,880,881,882,883,884,885,886,887,888,889,890,891,892,893,894,895,896,897,898,899,900,901,902,903,904,905,906,907,908,909,910,911,912,913,914,915,916,917,918,919,920,921,922,923,924,925,926,927,928,929,930,931,932,933,934,935,936,937,938,939,940,941,942,943,944,945,946,947,948,949,950,951,952,953,954,955,956,957,958,959,960,961,962,963,964,965,966,967,968,969,970,971,972,973,974,975,976,977,978,979,980,981,982,983,984,985,986,987,988,989,990,991,992,993,994,995,996,997,998,999,1000
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It is possible to access the player missile system without using the direct memory access method we have been using so far. This new method is much simpler to operate but has one major drawback — only a single byte can be placed in the player strips and this runs the whole height of the screen.

To see how easy it is to run on a non-DMA player type

**PONE \$3281,180;
PONE \$3281,201**

and press Return. And you will see a player strip. The number 231 is the bit mapped code that switches on selected pixels along the width of the strip and this pattern is then copied on every row.

Locations \$3281 and \$3284 switch on players 0 to 3 and \$3285 the missiles. The normal registers associated with player missile graphics can be used with non-DMA players — horizontal registers colour map, collision detection and so on — but vertical movement is impossible.

Program 1 is a demonstration of some of the effects that are possible with non-DMA players. The first section shows guidelines for player images adjacent to each other. The number 255 is PONE to location \$3281 to \$3285 to turn on all the pixels within each strip.

Additional colours are obtained on areas to the right of the screen where Playfield 0 (the test window) overlaps the players. The Graphics Mode 2 text at the top of the screen takes on a different colour depending on which player strip it is over.

The programmer has little control over what colours appear — experiment by changing the colour registers in the program to see other combinations.

If the stripes remain next to each other and are set to the same colour — as in the second section of the demonstration program — the effect is like entering a square playfield. Notice that text that appears on the right hand side takes on a different colour to that on the left.

Finally the program shows double size stripes with selected pixels plotted and illustrates how easy it is to move all the images together. By altering priority in register \$254 the stripes can appear to travel over or underneath the text.

In part VI of his series on player missile graphics **STEPHEN WILLIAMSON** brings all the techniques together in . . .



Non-DMA players can be used as an easy method of creating additional colours to those normally possible on a graphical screen. They can also be used as borders or incorporated into graphs and charts.

Program 1 is Bughunter, a game storing all the player shapes that have appeared in other programs in this series and demonstrating something of what can be achieved by the use of player missile graphics and the Basic language.

The object of the game is to catch a bug in a net and take it to the pile on the right of the screen. Treading on fruit, being barked on the head by falling fruit or being stung by the bug costs one life. Points are awarded according to how long it takes to catch each bug — the longer the time taken the lower the score.

To assist you in following the program, Figure 1 is a summary of all the main registers associated with the player missile system.

Player 0 is the man. Player 1 the top of the tree. Player 2 the net and Player 3 the bug. The falling fruit are missiles.

Playfield 1 is the tree trunk and vertical cage bars. Playfield 2 the border line and top of the cage and Playfield 3 the dark green ground at the bottom of the screen (set to the same colour as the test window).

The listing is liberally sprinkled with REM statements that document each section of the program. Lines 60 to 745 describe everything. They reserve the player missile data area

set the PMSBASE address, load shape and machine code data, set colour and horizontal registers, set initial values for the variables and set the Atari clock registers to zero.

If you have followed the rest of this series then a lot of these routines will already be familiar to you so they are fairly standard player missile manipulation procedures.

These machine code routines are included in the game, the same ones used in previous programs in the series. The first is a high speed clearance routine that clears any garbage that may have accumulated within the player data area. Line 250 calls up the routine.

The second routine transfers specified bytes from one area of memory to another and is used to control up and down movement of Player 3 (the bug). The last routine handles the downward movement of the missiles.

Bughunter is written in a series of subroutines. Each is responsible for a particular operation of the program — movement, collision detection, sound effects and so on. Lines 760 to 820 the central routine decides the order in which these subroutines are executed.

This type of program structure makes both writing the program and fault finding much easier than if the program was written largely in one continuous section.

If for example there is a fault in missile movement then it is safe bet to assume that the error lies within

DOWN	Vertical direction movement 1 (up 1, down 1)
HORZ	Horizontal coordinate for player's
HORZ	Horizontal coordinate for player's
LIVES	Number of lives left
M	Vertical coordinate of missile
NET	Bug in net flag (1=not hit, 0=not in net)
NUM	Data area address in pages
PHASE	Data area address in bytes
SCORE	Total score
SCORE1	Score of last bugcatch

Figure 4. Main variables used in *Explosion*.

give the bug its jerky flight pattern and lines 1030 to 1010 check the horizontal coordinate to prevent it flying off the screen.

Lines 1030 and 1050 use the machine's code routine to re-plot the bug shape. First we're wings, then without to give the illusion of flapping.

The sound effect for the flying bug is sorted out in line 1040. The two sound channels are changed according to the current vertical position of the bug as given by the variable *DOWN*.

Missile movement is processed in lines 1060 to 1120. Missiles only move down and line 1060 calls the machine code routine that moves them down the missile stripes. A fresh set of missiles is plotted at the top of the tree when the missile vertical variable *M* has reached a random value between 44 and 50 (calculated in line 1110).

This means that either the missile that will stay above ground to become a hazard to the min or will fall to a position that allows the min to paste over it.

Lines 1140 to 1210 check to see whether the bug is in the net.

Line 1150 tests if the horizontal position of the bug corresponds to that of the net. If this is not the case the rest of the routine is not executed.

Another check is made in line 1160 to see whether the bug is below the net as flying upwards. Lines 1150 to 1160 determine the conditions under which a successful catch is made. The bug must be flying down into the net and must be straight at exactly the right horizontal position. To make the game easier, these two lines could be altered to allow a greater margin of error.

If the bug has been successfully caught then *NET* is set to 1 and the bug moves 4 pixels down so that it

appears to sink into the net (line 1200).

If the bug has been put inside the cage then lines 1220 to 1300 update the score. Locations 18, 19 and 20 keep count of the internal clock. Line 1230 works out how much time has elapsed since the clock was last during the initialization routine and subtracts this time from 10000 to give a score based on how long it has taken to catch and cage the bug.

The rest of this subroutine updates the current score and performs some initialization functions before re-starting the game.

Lines 1310 to 1360 check the collision detection register to see if the bug (Player 3) or the missiles have hit the min. If a collision has been detected then the program jumps to the min dead routine at 1400.

The sound routine at 1380 to 1430 removes an alarm issued when the bug has been caught.

Lines 1450 to 1620 control Page 2 after the min has been hit. The FOR

NEXT loop between 1480 and 1600 moves min and net 14 pixels down the screen which because of the shape priority options set at location 823 means that the player past underneath. Playfield 3 (the ground) appears to sink into the earth.

Line 1610 reduces the remaining lives by 1. If a live remains then the program waits for the start key to be pressed before re-initializing the game. Address 83379 detects the Option Select or Start keys.

The rest of the min hit routine initializes the system ready to start the program again and lines 1640 re-plot the missile near Player 1 (the top of the tree).

■ Now you've seen how to write a simple game using player machine graphics, why not have a go at creating a program of your own?

Program 3

```

10 070 SCREEN=0:DEFINT A-Z
10 075 STICK=0:DEFINT A-Z
10 080 SCREEN=0:DEFINT A-Z
10 085 STICK=0:DEFINT A-Z
10 090 SCREEN=0:DEFINT A-Z
10 095 STICK=0:DEFINT A-Z
10 100 SCREEN=0:DEFINT A-Z
10 105 STICK=0:DEFINT A-Z
10 110 SCREEN=0:DEFINT A-Z
10 115 STICK=0:DEFINT A-Z
10 120 SCREEN=0:DEFINT A-Z
10 125 STICK=0:DEFINT A-Z
10 130 SCREEN=0:DEFINT A-Z
10 135 STICK=0:DEFINT A-Z
10 140 SCREEN=0:DEFINT A-Z
10 145 STICK=0:DEFINT A-Z
10 150 SCREEN=0:DEFINT A-Z
10 155 STICK=0:DEFINT A-Z
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10 165 STICK=0:DEFINT A-Z
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10 215 STICK=0:DEFINT A-Z
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10 410 SCREEN=0:DEFINT A-Z
10 415 STICK=0:DEFINT A-Z
10 420 SCREEN=0:DEFINT A-Z
10 425 STICK=0:DEFINT A-Z
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10 650 SCREEN=0:DEFINT A-Z
10 655 STICK=0:DEFINT A-Z
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10 675 STICK=0:DEFINT A-Z
10 680 SCREEN=0:DEFINT A-Z
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10 695 STICK=0:DEFINT A-Z
10 700 SCREEN=0:DEFINT A-Z
10 705 STICK=0:DEFINT A-Z
10 710 SCREEN=0:DEFINT A-Z
10 715 STICK=0:DEFINT A-Z
10 720 SCREEN=0:DEFINT A-Z
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10 750 SCREEN=0:DEFINT A-Z
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10 770 SCREEN=0:DEFINT A-Z
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10 950 SCREEN=0:DEFINT A-Z
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THIS month's type-on game is an epic. Written as a combination of Basic and machine code, *Cubes in Space* follows the Q*Bert style format, with some very colorful *Auto Mode 4* graphics and *Player Mania*.

This is the scenario. You have become bored with destroying yet more alien monsters, jumping on and off platforms and running around mazes feeling peckish.

Realizing there is now a gap in your life you have decided to indulge in a little bit of extra-terrestrial graffiti by drawing lines all around the galaxy-recommended *Space Cubes*, home of the now liberated Pezmen alien. It seems that you wasn't the only one bored with running around mazes... ☺

The Pezmen are naturally not at all amused by your vandalistic activities, and decide to have a go at stopping you. Everybody knows that evil Pezmen are quite harmless, but due to their prolonged stay in space these ones have become contaminated by assorted cosmic rays and the like, and are hence likely to burn you to a frazzle if you come into contact. You are advised to give them as wide a berth as possible.

There are eight different combinations of *Space Cubes*—each a little harder to cover than the last. After completing the eighth level you move on to level one again at a higher speed.

You move your graffiti marker with the joystick, but note that movement is diagonal only.

You lose one of your lives if you run into a radioactive Pezmen or fall off the side of the Cubes. The game may be paused at any time by pressing the speaker.

Be especially careful when typing in lines 1110 to 1112 (scrolling) and 10010 to 10015 (grape movement).

There are lots of other data and print statements to keep you busy, so try to make sure that you type in all of the special characters correctly. Don't forget that if you have any problems the *checkmate* should help — or why not get the completed program on the monthly cassette or disc? ☺

Full listing starts
on Page 30

CUBES IN SPACE

By MICHAEL BAXTER



PROGRAM STRUCTURE

0-1	Variables
60-100	Marker movement
200	Calculate Grids line
300-470	Markets pumped off side of Cubes
500-540	Checks which part of marker graphic is needed
600-660	Line 10 routine
660-1005	Prints line number
1005-1020	Defines new character set
1100-1112	Markets code for scrolling
1200-1210	Sound effects
1300-1310	Prints various cube layouts. (Type for study 4)
1400-1410	Randomly computes character
1500-1510	Prints setup
1600-1610	Tells screen and instructions
1700-1710	Prints message
1800-1810	Screen level display

[illegible][illegible][illegible][illegible][illegible][illegible]

There is some still controversy on programs, most especially:

MicroLinks

[illegible][illegible][illegible]

100

Commodore interfaces like industry standard key computers to printer connections and up the FCC interface should work fine and is reasonably cheap.

Paperboy for Atari?

I WOULD like to make a computer ad for Atari User, as the Atari software house.

It is about the arcade game Paperboy. I think it is a disgrace that Commodore Amiga and Spectrum should bring out the game while Atari has not.

I was also wondering if any Atari developer knows some thing of bringing out *Wheels in Games* as I have played it on an arcade and think it is a very good game. B. Carbridge, Stoke-on-Trent

Dumping graphics

I'VE barked through thick and thin through chat and know how I will not figure out how to dump a graphics screen from my 80085 onto my Atari 1050 screen. Is it possible? If it is, can you please help? —

Jonathan Evans

• See our article Screen dumps with the 1050 in the September 1985 issue. By the way, we're interested you do a check out and an update!

Basic update

I BOWED my 80085 over a year ago now and it's beyond of goodness.

I recently discovered it has *Rev B* basic. What should I do of anything at all to get the updated *Rev C* machine?

Secondly in future issues I would like to see announcements that get for example, small game on tape.

Because the next year for other where you could get the price

ATARI USER Mailbag

WE welcome letters from readers about your experiences using the Atari system, about tips you would like to pass on to other users, and about what you would like to see in future issues.

The address to write to is:

Mailbag Editor
Atari User
Europe House
88 Charter Road
Hazel Grove
Stockport SK7 5NR

up 30 or 40 per cent. I think the world's been busy paying and waiting on your mailbag — Steven Hall, Bolden-le-reverend, Wexham

• If your 80081 is out of guarantee when you find out that it has *Rev B* basic you can always purchase a plug-in cartridge of *Rev C* which will only cost you about £3.99 from most good Atari dealers.

As to your second question — we're not actually sure we can get away with asking people to pay in excess £30 for a free gift.

Cavern Escape — again

FURTHER to my earlier letter about Cavern Escape I notice you have started a collection this August issue of Atari User and still it works without loss 5500.

I have updated all the errors in the correct Christmas card it will not run again. Please tell me where where you have been. (Keep it please!)

Is it possible to produce a Christmas card which tells you whether the line you have typed in is correct either side have typed it in? I find this is right very rare continuous especially if you only have to correct lines in the middle one or two long programs — B.H. Maxwell, Cusack Heath, Queens

• As we read in the August

issue the listing is fine with or without line 5500 — and apart from that it was printed quite correctly.

If you have now got the Christmas card to match and you are still having problems could it be related to the old Rev B for even Rev A bugs in Atari? Check your revision and see if that might be where your problem lies.

That XL handbook

I HAVE tried to get the XL Handbook, Century Tech's review, but no bookshop in Edinburgh is able to. Could you please tell me where I should be able to get it? — Einar Ballard, West Lothian, Scotland

I AM rather late to the Atari world and already now to use magazines.

On buying the Atari 8005, a vintage recorder I copied the box and after temporarily installing a user manual it was laid in a queue forward to work.

They said No record not necessary to get a manual because the reference guide in their could appear alone.

It was true? It is could you recommend a good tape deck?

After I had problems with

the preface I have featured last month. How do you make a good tape deck and is it preferable to the deck? I should with the deck state could but not so good results.

Mark Voss, Long Barnington, Nottinghamshire

• You can get copies of The 13000 Handbook which covers the 8000, as well as the 13000 from most major Atari dealers, or by mail order from Software Engineers at Stone Ships if you have any problems.

As for Mr Voss's problem with his recorder — have a look at Einar's letter in the June 1985 issue which featured an editor which shows you to treat your own tapes.

Loading problems

ABOUT three years ago I purchased an Atari 400 and 410 monitor from Japan.

About a year ago I discovered the computer would not start programs. I even tried the monitor problem but all the games that was 8007 changed.

The service personnel worked well and I tried the latest programs on an 80081, and they worked.

Until I bought Mega Window from Commodore. I had only used Commodore so I didn't discover the error.

I tried the video recorder back for repair and after waiting four months and again I loaded a cassette into my computer and after the waiting has finished I found the video tape covered up with a double cover.

After 140 min were passed on the device I tried again and again but to no avail. In the time I used the computer and recorder had the monitor changed and I returned a message saying there would be a small delay.

After the postcard I read and was told the video tape was being fixed. I asked a

THIS program lets you edit various types of media—cassette or disk files, disk sectors and defined areas of memory. Modified data can then be stored back on any of the four media, regardless of where it originally came from.

To leave as much space as possible for the editing buffer, the program does not include many RISC instructions. After typing in the buffer, it is possible to edit a file of up to approximately 10k. Hex and cassette subprograms will also have a compressed version which enables approximately 17 kb to be edited.

The editor is designed to accept either hexadecimal or Atascii input which can be toggled by holding down the Option key and pressing M on the keyboard.

Other options are:

- H Go to new block
- P Go to previous block
- G Go to block number n
- C Convert a number from hex to decimal or back again
- F Format disk
- S Save data
- A Abort

You should save the program after typing it in as if there is the slightest error in the way you have typed in the machine language data statements, the computer may lock-up losing everything that has been keyed in so far.

After typing Buffer, a title screen is displayed and Please wait appears as the program goes through its initialization routine. After about 30 seconds the main menu is displayed.

There are five options allowing you to load the edit buffer from a cassette or disk file, disk sectors or memory, or alternatively to exit the program.

When loading from cassette the program prompts insertion of the tape and to press Start to continue or Option to abort. On Option the program returns to the main menu to allow another selection. If Start is pressed the tape file is loaded and the editing screen appears.

Follow the same procedure for disk files, but you will obviously need to enter the filename too.

When loading from disk sectors, start by entering the first sector to



By AARON SPILLING

load, followed by the number of sectors to load. Then as with tape loading, press Start to continue or Option to abort the process and return to the main menu.

To load from memory, enter the starting address (in decimal, ranging from 0 to 65535), followed by the number of bytes to transfer to the buffer.

The editing screen is displayed automatically after loading. The top line shows Editing block xx of yy where xx refers to the current 128 byte block being worked on, and yy is the total number of blocks currently in the buffer.

Below this is the actual data, with hexadecimal codes on the left of the screen and Atascii text on the right. At the bottom of the screen are notes to remind you of all the available options.

Simply hold down the Option key and press the highlighted letter of the function required. For example, to move to the next screen block, hold

down Option and press H.

The bottom line displays the status of the editor—hex or Atascii mode and the steps and inverse video settings. To toggle from uppercase to lower and back, press the Capskey only—neither Option nor the Shiftkey are necessary.

To move the cursor around the screen, hold down Option—not Control—and press one of the arrowkeys. You can then change the data by typing in the new information.

If editing in hex mode you may only use the 0-9 and A-F keys, and as you change the bytes the Atascii representation is automatically updated and retained in memory.

To change between the hex and Atascii modes, press Option and M. The cursor is always displayed in the hex area of the screen, but when in Atascii mode you can enter any keyboard character you like and both the text and hex codes will be updated.

There are three ways of moving on

Utility

[illegible][illegible]

1. The first step is to identify the problem. In this case, the problem is that the user is unable to access the internet.

2. The next step is to check the network connection. This can be done by checking the status of the network adapter in the device manager.

3. If the network adapter is not working, it may be necessary to update the drivers or reinstall them.

4. Another possible cause is a problem with the DNS settings. This can be checked by running the command `ipconfig /flushdns` in the command prompt.

5. If none of these steps work, it may be necessary to contact the network administrator for further assistance.

[illegible]

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2384	2385				



Birthday tips for Level 9

By Brillig

LEVEL 9 Software, which celebrates its fifth birthday this year, has provided much pleasure to untold numbers of adventurers. Happy Birthday to the team and long may they continue.

By way of a small tribute here is a collection of tips for three Level 9 adventures, including the very latest *The Price of Magic*.

We're also featuring hints from two of Infocom's brotherly trilogy. As any Infocom aficionado will know, the standard punishment for wandering in the dark without benefit of lamp or other source of light is to be

pounced on by a ghast and immediately done to death.

Not all of Infocom's adventures star these feared (yet strangely welcomed) denizens of the dark, but even as they do seem to crop up fairly regularly I'm pleased to say

In Brian Moriarty's near-adventure *Trinity*, reviewed in this month's issue of *ADAM & EVE*, the mere mention of a ghast meets with a sigh as a response. Although grateful to put in an appearance in this one, their omission is more than made up for by the inclusion of one of the most fearsome-looking *Barrow Wights* it's ever been my misfortune to meet up with.

Go and get *Trinity* — it's marvelous. And be sure to visit the one-eyed note.

Finally what do you think about being direct, but simply asked solutions to problems in *Also Dead?* Would you rather they weren't coded at all? Or perhaps like some adventures, you might prefer not to be given solutions, but instead would rather have cryptic clues so that some of the brainwork is still left up to you.

I'm sure you've got strong views on the subject, so why not write in and let me hear them? ■

GLITCHES OF THE MONTH

This month two *Waterlilies* adventures happened to have their glitches revealed for all to see.

Firstly, in Infocom's *Trinity*, you'll eventually find yourself standing by a waterfall. If you'll then type GET WET, you'll receive the following

response: "You're already basking in the handful of honey".

Secondly, when you're in front of the guru's hut in *Darkside's The Pawn* any GLIMB THE HUT: You won't stand up on the roof as hoped but merely leave the hut — it must be open-roofed.

HINTS & TIPS

LORDS OF TIME

Having problems in the amphitheatre? To deal with the lion:

ROCL CRTT ATEN ENTW DAHT
TWID JIVE RTWD RHT

To elude the gladiator:

SLAD WADD COIN WONT RAEW

Can't pass the inversion room?

RYWD BOGN ENTA KIRU SPUG HS

THE PRICE OF MAGIC

Want to help the ghost and get the plate away?

TPYR CORT BUSH WORD RALL UNSE WONE LKCU

AKEN TRUD B

Can't see in the dark?

MOCH AGGR DAWI TWDR FONG MICE KEEN TIES
SEKE RATH CLIM EVER UP

What use is the wargame on the large table near the roof garden?

ROGS AMHT RWTI EKAW GOWY KLE PGAN RAGL LKWW
GOW

RED MOON

To carry the sword from the forge

SEWD LORE HAME DEHT RAEW



Adventuring

Problems in the final room?
STOD BNOT GAVE LEMF HTVA ZW

SORCERER

This adventure features, for the first time, an actual grid's list. However, these are no ordinary grids but riddles – they aren't scored of light.

So just how do you manage to get by them? Or get by them you must?

DOWN DITE A TON POIG AMWZ GROW HWYD DAWN UDY
NODGA LENT FORD OULF HTND SITI
SNH YTHF VERR GDUO YTHF EVOM ESTE WONA
CETA PCW T
DEW FROM ERGU OYKA BRUL SAOW A
CRAS OULP ERK LANT RUSE WAGL HTSH ERSE W
TWEL LEPH RENT HTWPLES RUDY DNY NAMP SNO
AGUD HTLO DRYW SVDY SRNE WTHL LEPH ERSE T

When you visit a grid in the dark in the adventure and in Spellbreaker, have you ever seen what happens when you attempt to PROTE GRUE?

SPELLBREAKER

In this final and toughest part of the excellent Enchanter trilogy, there's a grid cave which is simply teeming with the nasty brutes. There's only one way to survive this gruesome experience.



SNAC ERUD BHTD TMT HGL YHAY ARAC TORD G
ANDD TBMW AMUL LAMU OYON AELU GAG TMAN S

As soon as you've completed the above, perhaps for fun you might like to try the following. They won't help you to escape, but they're a juggle!

AFWA LS
DUNG ARCA TTA
DUNG A TA KOGI

Lastly, when you first enter the cave, have a go at YODthing a gaw.



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NEWSLETTER

Helping relieve famine

MICROLINK was used to keep track of progress in a nationwide computer game marathon which raised more than £8 000 for Ethiopian famine relief.

The event involved micro owners all over the country playing the roll role-playing adventure Gungana and Dragons.

Two teams of nine took part in a stamina-testing Marathon at the Digital Square Community Centre in London and inside themselves into the Gungana Book of Records after 84 continuous hours.

Other major Dragon All events were held simultaneously at Aberdeen and Birmingham and hundreds of mini sessions took place in family living rooms throughout Britain.

Organiser Adrian Moss said the on-line adventure lasted at least half of the £8 000 which will go to Red Cross's Band Aid Trust.

RADIO FANS ARE TUNING IN TO MICROLINK

WHILE its 38 000 members communicate with one another across the ether the Radio Society of Great Britain has been conducting its business closer to the ground via telephone, email and traditional telex.

But all that is changing thanks to the society's group of members on MicroLink.

Chief executive David Evans says: 'We are using MicroLink as a means of exchanging information between myself and a large number of members in the field who serve on our 18 committees and other subunits both nationally and internationally.'

Being a commercial organisation, by law we cannot use the committee to conduct our business as the national organisation for

radio amateurs in the UK.

We represent the licensed amateur at government level and also publish books, magazines and technical material under 28 different titles.

A remarkable two-thirds of our members are micro owners and we hope MicroLink will eventually be used for much of our committee work and the transmission of material for our publications taking the place of ordinary telex and to a certain extent, the telephone.

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Sunny solution

OUT on the sunny Costa Blanca, David Correas is spreading the word about MicroLink to Spanish-based business people and fellow expatriates.

Correas, whose background is in insurance, believes there's a real need for their island community online using a community site has along the with other expatriates, particularly

the UK. He has been doing in Alicante for 18 months, setting up a company providing computers, modems, network software and camera software to Spanish residents with links abroad.

He has made MicroLink his choice as the recommended communications system for his clients, setting a target of 500 new mailboxes in the first year.

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Atari ST User



EXPOSED: The little fellow
who lives inside your ST

*Advice on screen dumps, 1st Word and Degas
Reviewed this month: Leaderboard • Flash
STAccounts • K-Graph • Thunder*

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Show was an Atari celebration

ATARI swept into the prestigious PCW Show with all the pomp of royalty dragging in its train. From its 1,000 square metres of silver gleam to the upper floor it gleamed importantly — if not dazzlingly — down on each broker (referred to, incidentally, as *Amateur*).

Most jobs that break and eager soul had attempted to do at some of the fountains the day before with the touch of its IBM alone.

But if Atari was as all concerned, no one was showing it (because it turned) the first day of the show was an unofficial first birthday game for the ST.

First came the news that 250,000 of the machine has been now been sold worldwide — though no one was prepared to come up with an accurate figure for the UK.

But of more interest to current UK ST users was the announcement that more than 600 software titles are available.

And that — as Rob Harding, Atari UK's marketing manager gleefully pointed out — for example that of the IBM PC at its first year. In fact there is a prime conference at the Atari camp that the IBM PC will eventually be superseded by the ST as industry standard.

The thinking behind this is that it is becoming generally known that IBM itself is more than a little impressed all with being closed off from the world.

So it is becoming increasingly likely that the game of quints in the computer industry may well pull out of this market sector.

What would follow would be a bloody battle between the clients, with Atari's almost certainly coming out on top. After this it is where the Atari showing starts to make sense for Atari's a little more than a package at other people's good ideas.

It could be argued that Atari's a long time ago has never lost its original thought in its corporate life.

In fact Atari's ready admits that such words as *reality* and *development* just aren't in its papers. They follow day camp, all stress and make a living.

But since they're looking further into a PC, where do they go from there? With also is there to follow?

This will result in the IBM PC market going to a full observation of a most serious dilemma, and that will leave the ST out on its own.

Now then Atari is prepared to write off IBM just yet. After all it is still struggling to perfect its own IBM emulator for the ST.

It currently has a prototype which will run part of Lotus 1-2-3, the package that every close must use if it wants to be accepted. But it won't be released until it can run the entire program and conform to other parts of the Lotus's battery structure as they wish list. And until that happens no one will even operate on a drive log.

Mike Cowley, head of the PCW Show, Atari announced its own show — but this turned out to be of the software variety. Atari's a 100,000 copies of about 80 which usually sells for in excess of £500.

The package allows the user to create anything from simple mailing lists that use a single file to complex applications such as order entry systems using many files with multiple indexes. Features include 10 access databases up to seven index files per database, unlimited memory variables, and the software supports dBase, dBase and dBase databases. It comes with a 300 page manual which claims to

be suitable for both the beginner and the advanced user which — if true — would in itself be some sort of breakthrough.

Back to the show once more, where Atari for its second to do on opening day produced *Herzog* the Atari ST users — for a modest £48 — to enhance electronic mail and access bulletin boards and information databases.

Clearly those people wishing to see themselves of the delights of such organisations as *Herzog* in the UK or *The Source* in the United States will also require a modem.

Atari stress the security of data transmission is assured through the utilisation of the X-Modem and binary protocols. For the uninitiated in systems, this does not mean it is safe from hackers but rather that the data will not become mangled on transmission.

Do you want to turn your ST into a versatile intelligent terminal, graphics workstation or a fraction of the normal cost? Atari offered the answer in the PCW Show. It takes the form of the *Terminal/ST* software package with a price tag of £50.95. This allows the machine to emulate 386 XT/486 compatible and Tektronix 4100 graphics board terminals connected to a main or mainframe device or via a network.

Mike Cowley reporting



I HOPE that those of you who visited the Atari Village at the PCW Show at the beginning of September enjoyed yourselves, saw all the new hardware and software, and managed to meet lots of new Atari friends. For those of you who didn't go, Andrei Willey takes a look at the new hardware in this month's editorial and we will be presenting a full show report in next month's issue - Don't miss it!

Now to your problems. Mr. Van Tienen from Bury ST Edwards asks whether ST disc drives from companies other than Atari are totally compatible with the Atari drives. A number of companies have recently started to produce 3 1/2 disc drives for the ST, most notably A&E and Cursons. These are usually 1mb-drives and are as much as £80 cheaper than Atari's SPST4 drive. So where's the catch? Well, right at present we'll remember the same situation with the disc drives for these machines. About four years ago various companies in the States started to produce cheap disc drives for the Atari 800. Although they were said to be totally compatible they were found not to fit an Atari program protection scheme. The non-Atari drives worked perfectly except when trying to load some - and I mean only some - protected programs.

Now we have the same potential problem with non-Atari drives for the ST. Though the drives for the ST should be easy to make since the disc controller is housed inside the ST itself there are two potential problems.

The first is that small differences from the Atari drives that don't show up now might start causing loading problems in two or three years time when the software companies are using more exotic methods of software protection.

The second problem stems from GEM which allows you to open a directory window, change the disk in the drive and then press the **File** key to re-read the directory. The Atari drives have a special circuit which tells the ST whenever you change a disk. The AST and Cursons drives both have this circuitry, but some others might not.

What you must consider is whether you want to save £80 now and have a possible problem later, or pay the full price and play safe. I'll keep

Save now and pay later...

you posted if I hear of any drives that are causing problems, but so far the AST and Cursons versions have a clean bill of health.

I'd like to thank Robert Young from Benhamwood who has written to tell me how you can insert printer codes in your **1st Word** documents. If you look at the character chart which is displayed behind the document windows in **1st Word** you will see that it includes many characters that are unavailable when using most printers.

You can use these characters to look **1st Word** into sending special codes to the printer when your document is printed. For example you can now use superscript, subscript and even condensed modes in your documents. To do this simply edit the printer translation file by changing the codes for the letters into the codes for the special printing modes. To test that mode you simply include the character at the place where you want the mode to start.

On the subject of **1st Word**, Ian Cursons has written to complain of the problems he's having with version 1.00. It is unfortunate that some dealers are still supplying STs with old versions of **1st Word**. The latest version 1.05 solves all of these problems and has been available for some time. If you take a disc to your local dealer and ask him nicely, I'm sure that he'll give you an updated copy.

Several of you have written in to ask for the fix to the Degas bug which Ken Bulmer mentioned in his graphics article in the May issue of **Atari ST User**. Sometimes when you load a black and white picture into Degas the picture is reversed. The only solution seems to be to start drawing the picture from scratch.

However there is a simpler answer - one click on the **Set Colors** option and the picture will be restored to its normal colours. Hopefully next time this bug permanently fixates the next version of Degas.

That's it for another month. Keep the questions rolling and I'll do what I can to solve your problems. If you'd like to keep your fellow ST users, why not send in your favourite hints and tips?



Notes

- How many times have you started a screen dump using the **Alt+Help** key combination only to find that there is no paper in the printer or you are getting the wrong screen display? Luckily the designers of the ST had you in mind when they included a command to stop the screen dump before it has finished. To do this simply press **Alt+Help** again and the screen dump will stop as soon as the printer buffer is empty.
- Also, if you use the **Show options** to load in a document and you don't wish to view the entire text, simply press **Control+C** before the **More prompt** and you will be returned to the desktop.

Send your Atari ST queries to: **ANDREW BENNETT, Atari ST User, Europe House, 68 Chester Road, Hazel Grove, Stockport SK7 5NY.**

MEGAMAN C: Best for the ATARI ST

Reviewed in *ATARI User*, September 1986 by Peter Knowles and Roger Wier:
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Last month we took a look at communications — using your computer to talk to another which could be almost anywhere in the world. To do this you need two things. The first is a modem, which allows you to connect your ST to the telephone and thus to any other computer with similar facilities; without it you are limited to direct connections with the other computer.

The second thing you need is software. To start with you can try using the VT 53 Emulator desktop simulator provided with your computer which will allow you to send and receive text but nothing else. If you want to make the most of your new found link with the world you need a sophisticated communications program.

There are a number of relatively simple public domain programs which can be used, but they all tend to be rather raw. One of the first of the more advanced packages to come from the States was PC Intercom, which offered a host of features but at a rather advanced price.

However, since there is an alternative for less than £400 Flash from Andre Software does almost everything that PC Intercom could offer plus an awful lot more.

Perhaps I should say from the outset that this is a text based communications package and that it originates from the United States, which means there is no support for the full baud rates used by some British modems. Such rates as 1200/75 are simply not used in the States where they prefer to use 300/300 or 1200/1200. The other omission which will be noticed over here is the lack of the Prestel standard which again is not used in the States.

In fact it was Prestel that brought about the need for 1200/75 as it only required eight single key entries from the user — the long worded manual being sent by the system. This meant that it was most convenient for Prestel to send its information quickly — hence 1200 baud — but the user need only send a two digit code — 75 baud. The eight baud rate could be achieved quite easily by using a speed buffered mode in such as the Model W54000, but there is little you can do about the lack of a Prestel decoder.

That said this package more than makes up in other ways. You are provided with three main

modes — plus text mode. VT 100 and Visiart. The first is a straightforward character-only mode. VT 100 also allows the host system to control the on-screen cursor and text and is quite impressive when used with systems that support the standard such as MicroLink. Visiart is the system used on CompuServe to provide graphics as well as text and host file use unless you plan to communicate with the States.

Flash can configure a wide range of parameters including full and half duplex, multiple baud rates, word wrap/stop bit settings, linefeed, Cn/Cr, echo/echo, echo, text back to the host system in the same way as bulletin boards do to you. Screen size, printer echo, Xmodem and many others. Any option can be tested by pressing the test key and then entering your command.

These commands are two character signals, so BA 300 means the same as BAUDRATE 300. All operations have host key commands but many also have back access by using the Alternate key. For example, Alternate H selects haltscope and Alternate +U selects an ASCII file upload.

Clicking on the right mouse button takes you to the control panel and buffer screen. The control menu bar is now visible, having been removed during screens to get the full 24-line display for VT 100, and features pull-down menus to cover every aspect of Flash.

Below this is the text buffer, which includes a very useful word processor with a 52087 word TOS in ram you have about 2.8K in the empty buffer — or about 80 A4 pages of text — and you can either capture text from an on-line session, load from disc or type in directly from the keyboard.

With text in the buffer, you have normal word processor cursor and cut/paste/delete functions. Once you have highlighted a block, you may deal with it separately from the rest of the buffer — either uploading it, or saving it back onto disc. Uploads and downloads may be achieved via plain text transfer or by Xmodem, and each has its own menu item to allow total flexibility. Various filtering and prompting on any character are available for text and Xmodem features 128 or 1024 byte blocks and the option of blank fill or terminate block options for EOT (end of transmission). Any upload can operate from disc or straight from the buffer, or from the current marked block.

Flash also allows you to choose as many menu functions as you like. These are similar to short

**Andre
Willey
looks over
a budget
comms
program**

User-friendly takes on a whole new meaning...

I've got a friend. His name is Fritz. He lives in a nice little house with his dog, Sherie, and I visit him as often as I can.

Come to that, most of the staff in the office drop in on him from time to time. In fact, visiting Fritz has often caused work here at Database to come to an abrupt standstill.

Fritz is my Little Computer Person, and he lives inside my \$299T. Most computers have Little Computer People (or LCPs) living inside them, but they are too shy to come out. You may have noticed them at work when a file suddenly vanishes, or a program simply won't run for no readily apparent reason. This may well be the work of your very own LCP.

In order to meet your own LCP, all you need do is give him a pleasant house to live in. Those thoughtful people at Activision have done just that, with their new game, Little Computer People.

Upon booting up, your LCP Hand will soon notice this nice new house, and after a little negotiation, he will move in. Each computer has a different LCP inside, and the program writes back to the disc periodically to record the current health and status of your own LCP.

If you forget to provide food and water he will get rather distressed and go very pale. I must admit to feeling rather guilty the last time that happened, and I had to feed the poor chap immediately.

Although he doesn't speak in English, Fritz is an active chap. He often writes me letters, and I regularly send him presents. He seems to like receiving records, because he usually goes straight upstairs to play them. He is quite keen on music, because he plays the organ too. If you have a synthesizer connected to your BT via the Midi port you can hear him play, too. Otherwise the sound comes from the monitor as usual.

You can ask an LCP to do all sorts of things, or to play games with you. Fritz quite often suggests a game himself, and he will often bring the subject up when nothing much else is happening. He seems keen on card and word games, which suits me fine.

By ANDRÉ WILLEY

The whole program is well thought out and very original. It takes account of the time and date when deciding what Fritz will do next - for instance, try getting an LCP out of bed at 4 o'clock in the morning - I've tried, but he simply mangles the alarm clock and goes back to sleep!

All of us at the office have found him addictive to watch, and some have even taken him home with them at night.

Sound	7
Graphics	8
Playability	10
Value for money	8
Overall	8

Dear CHRIS,
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good supply of water; and it's



es



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activities playing
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Pageant Ladiesland

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LBT me see miv. I'm in the rough, about 150 yards short of the green. The earth violently roars & blowing pretty strongly and I've got to clear the lake about 80 yards ahead. Better watch out for that gaping bunker on the left, too - a hooked shot and I'd be up to my plex-lovers in thick sand.

A full blooded whack with a 5 iron should be just right to put this pit stop bang up against the flag. Start the backswing, get the shoulders right behind it, snap the wrists true and - FORE! Obnoxious! The sliced straight into the branches of those trees!

Well, whether you're a duffer or a Seve, or even if the nearest you've come to swinging a club is on a seaside oncey putting course, you're going to love Ladiesland.

This is a superb golf simulation, offering a testing game across four different courses. You can't play against the computer, rather you pit your skills against the course and, optionally, up to three other human players.

Each game can be on 18, 36, 54 or 72 hole match, using any combination of the courses available. There are three skill levels to pick from, ranging from novice which leaves your shots unaffected by slice, hook or wind, to pro, which leaves you susceptible to all.

Each hole is depicted in 3D perspective against a varying horizon and is played up the screen. At the bottom of the picture, and so facing towards the hole, is a smoothly animated golfer (the current player) who automatically swings and attacks the ball at your command.

Control of the golfer during play is by mouse only and is perfectly satisfactory. You first select an appropriate club from the three woods, iron, club and putting wedge (but not putter - you are given that automatically and only when on the green). A small cross hair can be moved to determine your line of aim.

Pressing the right mouse button means the swing, while the length of time it is held down determines the power of the shot. A further press at the maximum, the club connects with the ball effectively, snaps the golfer's waist the more powerful the swing, the more violent the backswing, the more the club, the wider the slice.

To help gauge power and the right time to snap, two indicators are shown at the right of the screen. These graphically depict the build up of power and the approach to optimum snap time.

When struck, the ball sails convincingly away to land in the distance, after which the picture is swiftly updated to show the new view (ie the green). Only on the green the two indicators are replaced by a slope power indicator. While putting, the wind has no effect and slicing or hooking is impossible - thank goodness - but you must take account of the green's incline

Golf as it should be played



shown by the slope indicator.

Other information on show is a score indicator (score on this hole for each player) and how many shots is under or over par for the round so far; a wind strength and direction indicator, current club selected and remaining distance to the green, or hole, if already on the green. Between holes, a fully detailed leaderboard is displayed.

On the top-selling version of Ladiesland for the Commodore 64, every hole was made up of water separated fairway islands - attractive but totally unrealistic - and a green while the instantaneous horizon was always the same, no matter where you were.

A great game has been much improved for the Atari ST. There is still plenty of water, but thankfully for fans of those dull islands, bunkers, trees and rough have now been incorporated making the courses very realistic.

When your ball curled off to the left, straight off the picture on the 64, it was deemed out of bounds and you had to remake the shot. On the ST, even if your ball does go part of the picture, you get to play it from where it lands.

The horizon now varies - mountains, led and sometimes snowcapped, skyscrapers, clouds and weather formations - and the vista is adjusted according to where you land.

But it's not all unimagined grass. The few sound effects could have been a lot better given the ST's capability. The whoosh of club swing and the crash when ball hits tree are OK, but the rest - splash of water, clack of putting mallet and

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castle of hell into hell – are pretty close.

The game is not entirely laugh-free. Despite the instructions warning that you could abandon a hole and go on to the next by passing H, the program refused to respond to this command. Once or twice I also managed to play my ball from the middle of a lake.

It seemed easier to hit straight shots on the ST version than the 64, probably because the authors have slightly slowed down the speed of the map run up. I would have preferred a slower test option.

But those are small niggles. *Landstreak* is

first rate and hugely entertaining, whether you're into golf or not. The variety of levels, player participation and courses plus it's depth enough to keep you coming back, time and again.

Pass me my mouse, kiddie, let's see if I can break 190.

Bob Chappell

Sound	.....	4
Graphics	.....	4
Playability	.....	4
Value for money	.....	4
Overall	.....	4



Accounts time – saver

Product: *STAccounts*

Price: £180

Supplier: Silicon Chip, 32 London Road,

Kingston upon Thames, Surrey Tel 01 540

6837

Of all the various tasks that the new businessmen must face, keeping the books up to date must surely be one of the most difficult.

When his accountant first shows him the large amount of work that must be done in order to keep the accounting of the business running smoothly, the ordinary businessman starts thinking in terms of early retirement or a live-in bookkeeper.

Owners of small businesses are constantly having to spend five or six working days a week to get the various ledgers ready for the coming week. Falling behind one week causes a ripple that can be felt as little as three months later when the VAT men arrive with their adding machines.

STAccounts sets out to solve these problems for the small to medium sized business. Written in C with some routines in fast machine code it is integrated with Gem, so all selections are made with the mouse from the visual drop down menu. The package is split into four separate parts: Sales Ledger, Purchase Ledger, Stock Control and Nominal Ledger. Each part of the program can communicate with and use data from the others.

It can support up to 300 sales, 300 purchases, accounts, 10 VAT rates and 10 discount rates. Every time a rate is used in the ledgers it is referred to by its number. If the VAT or discount rates should change the only alteration that needs to be made is to these 10 settings.

A separate data disc is specially set up from the program. The different parts of the program can generate reports ranging from VAT sales and turnover to aged creditors and from total turnover to statements of accounts.

The 44 page manual covers every angle of the program in detail and I must grant permission to explain jargon as much as possible. A few more illustrations would have been useful, but overall the

manual supplies all the information that someone who is setting up a business or computerising his accounts will need and is presented in a simple and helpful way.

Most ST programmes assume that once the mouse is so easy to use they don't have to provide any Help screens inside the program itself. *Silicon Chip* has taken the unusual step of providing an program help via a small icon of a teddy bear located in the bottom left hand corner of the screen. You simply click on this and a full screen explanation is given about the part of the program you are currently trying to use.

Although *STAccounts* doesn't have the extra facilities such as a built-in word processor that *Castlelink Accounts* has, the reason in the August issue of *After ST* (and it is less than half the price). In addition it can be used with one or two 500k drives whereas *Castlelink* requires at least one 1mb drive.

Is it worth having an accounts program at all? To answer this question you must weigh up the cost of your time saved and the saving in accountants fees. But do make sure you see the software demonstrated before you commit yourself.

Andrew Bennett

P.O. BOX 100, GLEN LINDA, ACT 2615, AUSTRALIA Tel 06 457 1111



Program K-Graph
Price: £39.95
Supplier: Kuma, 12 Humberston Road, Pangbourne,
Bucks. Tel: 07537 43339

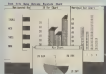
As its name suggests, this program produces graphs either from data typed directly into the program or loaded in from another program such as K-Spread. K-Spread is Kuma's spreadsheet program, reviewed by Andrew Wiley in the March issue of *Amn ST User*.

K-Graph can produce anything from ordinary line graphs through 3D bar graphs to pie charts. Up to four different graphs can be displayed simultaneously on screen. The various values and the axis can be labelled and a number of patterns are available to fill in the graphs.

Graphs can either be printed out or saved to disc in a format that can be read into Degas for further editing. K-Graph is supplied with a 56 page manual which deals with each of the many aspects of the program and includes many examples.

This is an excellent program for anyone

Bar graphs? Easy as pie charts



wishing to produce graphs from data produced by K-Spread or typed in by hand. Owners of K-Spread should note that K-Graph will only accept data produced by version 1.3.6 or greater. If you have an older version, Kuma will be happy to replace it if you return the disc to them.

Andrew Ralston

Lost for a word?

Program Thunder
Price: £29.95
Supplier: Aclatsoft, 88 Langdon Court, Gillingham,
London ME22 5JH. Tel: 01-432 3412

HOW many times have you spent hours looking through your dictionary for the correct spelling of some obscure word? And how often have you spell checked documents that you assumed were finished, only to have the spell checker tell you that every second word is completely misspelt?

Thunder from Aclatsoft is the answer to both of these problems. It works in one of two ways: either as a stand alone spell checker or as a desk accessory which checks your spelling as you type.

As an ordinary spell checking program, Thunder performs well, checking at a rate of over 2,000 words per minute against its 60,000-word dictionary. When Thunder meets a word it doesn't know it shows the word in context and asks you whether it is spelt correctly.

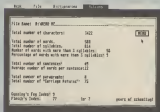
You are given the usual options of adding the word to the user dictionary, correcting the word or leaving it alone. The program also suggests up to seven possible alternatives for the word's correct spelling. You simply click on one of these or type the correct word and Thunder inserts it into the text at the correct position.

As a desk accessory, it checks the words as you type and sounds a bell if you type a word that

it doesn't know. When you select the Thunder option from the Desk menu, you are given the choice of up to seven words to select from, or you can type the correction and Thunder will replace the misspelt word with the correct version.

Although not exactly cheap, Thunder is probably the best spelling checker on the market for the ST and compares well with Turbo Lightning, which has created a storm of interest on the IBM PC.

Andrew Ralston



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^aFor highest specifications that generally are available indicated (LPG) or (HFO). See also section 6.0.

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